of Air, Water, or Glaſs of an even thickneſs appeared of one Colour when the rays were perpendicular to it, of another when they were a little oblique, of another when more oblique, of another when ſtill more oblique, and ſo on ; ſo here, in the ſixth Obſervation, the Light which emerged out of the Glaſs in ſeveral obliquities, made the Glaſs appear of ſeveral Colours, and being propagated in thoſe obliquities to the Chart, there painted Rings of thoſe Colours. And as the reaſon why a thin plate appeared of ſeveral Colours in ſeveral obliquities of the rays, was, that the rays of one and the ſame ſort are reflected by the thin plate at one obliquity and tranſmitted at another, and thoſe of other ſorts tranſmitted where theſe are reflected, and reflected where theſe are tranſmitted : So the reaſon why the thick plate of Glaſs whereof the Speculum was made did appear of various Colours in various obliquities, and in thoſe obliquities propagated thoſe Colours to the Chart, was, that the rays of one and the ſame ſort did at one obliquity emerge out of the Glaſs, at another did not emerge but were reflected back towards the Quick-ſilver by the hither ſurface of the Glaſs, and accordingly as the obliquity became greater and greater emerged and were reflected alternately for many ſucceſſions, and that in one and the ſame obliquity the rays of one ſort were reflected, and thoſe of another tranſmitted. This is manifeſt by the firſt Obſervation of this Book : For in that Obſervation, when the Speculum was illuminated by any one of the priſmatick Colours, that Light made many Rings of the ſame Colour upon the Chart with dark intervals, and therefore at its emergence out of the Speculum was alternately tranſmitted, and not tranſ-

tranſmitted from the Speculum to the Chart for many ſucceſſions, according to the various obliquities of its emergence. And when the Colour caſt on the Speculum by the Priſm was varied, the Rings became of the Colour caſt on it, and varied their bigneſs with their Colour, and therefore the Light was now alternately tranſmitted and not tranſmitted from the Speculum to the Lens at other obliquities than before. It ſeemed to me therefore that theſe Rings were of one and the ſame original with thoſe of thin plates, but yet with this difference that thoſe of thin plates are made by the alternate reflexions and tranſmiſſions of the rays at the ſecond ſurface of the plate after one paſſage through it : But here the rays go twice through the plate before they are alternately reflected and tranſmitted ; firſt, they go through it from the firſt ſurface to the Quick-ſilver, and then return through it from the Quick-ſilver to the firſt ſurface, and there are either tranſmitted to the Chart or reflected back to the Quick-ſilver, accordingly as they are in their fits of eaſie reflexion or tranſmiſſion when they arrive at that ſurface. For the intervals of the fits of the rays which fall perpendicularly on the Speculum, and are reflected back in the ſame perpendicular Lines, by reaſon of the equality of theſe Angles and Lines, are of the ſame length and number within the Glaſs after reflexion as before by the 19th Propoſition of the third Part of this Book. And therefore ſince all the rays that enter through the firſt ſurface are in their fits of eaſy tranſmiſſion at their entrance, and as many of theſe as are reflected by the ſecond are in their fits of eaſy reflexion there, all theſe muſt be again in their fits of eaſy tranſmiſſion at their